Appendix A

Primary Divided Arterial 4 Lane – Capacity Analysis

Appendix A
Primary Divided Arterial 4 Lane – Capacity Analysis

HCS2000: Urban Streets Release 4.1

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	LMB	
Agency/Co.:	P&D	
Date Performed:	2/3/2003	
Analysis Time Period:		
Urban Street:	PRIMARY DIVIDED ARTERIAL 4 LANE	
Direction of Travel:		
Jurisdiction:		
Analysis Year:		
Project ID: CA High Speed Rail		

Traffic Characteristics

Annual average daily traffic, AADT	30990	vpd
Planning analysis hour factor, K	0.100	
Directional distribution factor, D	0.600	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	75	%

Roadway Characteristics

Number of through lanes one direction, N	2	
Free flow speed, FFS	45	mph
Urban class	2	
Section length	1.00	miles
Median	Yes	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	8	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	90.0	sec
Effective green ratio, g/C	0.510	

Results

Annual average daily traffic, AADT	30990	vpd
Two-way hourly volume	3099	vph
Hourly directional volume	1859	vph ➔ 930 vphpl
Through-volume 15-min. flow rate	489	v
Running time	109.0	sec
v/c ratio	0.27	
Through capacity	1835	vph
Progression factor, PF	1.000	
Uniform delay	12.5	sec
Filtering/metering factor, I	0.974	
Incremental delay	0.3	sec
Control delay	12.9	sec/v
Total travel speed, Sa	17.0	mph
Total urban street LOS	E	

Appendix B

Secondary Undivided Arterial 4 Lane – Capacity Analysis

Appendix B
Secondary Undivided Arterial 4 Lane – Capacity Analysis

HCS2000: Urban Streets Release 4.1

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	LMB
Agency/Co.:	P&D
Date Performed:	2/3/2003
Analysis Time Period:	
Urban Street:	SECONDARY UNDIVIDED ARTERIAL 4 LANE
Direction of Travel:	
Jurisdiction:	
Analysis Year:	
Project ID:	CA High Speed Rail

Traffic Characteristics

Annual average daily traffic, AADT	21350	vpd
Planning analysis hour factor, K	0.100	
Directional distribution factor, D	0.600	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	50	%

Roadway Characteristics

Number of through lanes one direction, N	2	
Free flow speed, FFS	35	mph
Urban class	3	
Section length	1.00	miles
Median	No	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	8	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	90.0	sec
Effective green ratio, g/C	0.500	

Results

Annual average daily traffic, AADT	21350	vpd
Two-way hourly volume	2135	vph
Hourly directional volume	1281	vph → 640 vphpl
Through-volume 15-min. flow rate	674	v
Running time	140.0	sec
v/c ratio	0.39	
Through capacity	1709	vph
Progression factor, PF	1.000	
Uniform delay	14.0	sec
Filtering/metering factor, I	0.925	
Incremental delay	0.6	sec
Control delay	14.6	sec/v
Total travel speed, Sa	14.0	mph
Total urban street LOS	E	

Appendix C

Primary Divided Arterial 6 Lane – Capacity Analysis

Appendix C
Primary Divided Arterial 6 Lane – Capacity Analysis

HCS2000: Urban Streets Release 4.1

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	LMB
Agency/Co.:	P&D
Date Performed:	2/3/2003
Analysis Time Period:	
Urban Street:	PRIMARY DIVIDED ARTERIAL 6 LANE
Direction of Travel:	
Jurisdiction:	
Analysis Year:	
Project ID:	CA High Speed Rail

Traffic Characteristics

Annual average daily traffic, AADT	48770	vpd
Planning analysis hour factor, K	0.100	
Directional distribution factor, D	0.600	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	75	%

Roadway Characteristics

Number of through lanes one direction, N	3	
Free flow speed, FFS	45	mph
Urban class	2	
Section length	1.00	miles
Median	Yes	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	8	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	90.0	sec
Effective green ratio, g/C	0.510	

Results

Annual average daily traffic, AADT	48770	vpd	
Two-way hourly volume	4877	vph	
Hourly directional volume	2926	vph	→ 975 vphpl
Through-volume 15-min. flow rate	770	v	
Running time	109.0	sec	
v/c ratio	0.28		
Through capacity	2753	vph	
Progression factor, PF	1.000		
Uniform delay	12.6	sec	
Filtering/metering factor, I	0.970		
Incremental delay	0.2	sec	
Control delay	12.8	sec/v	
Total travel speed, Sa	17.0	mph	
Total urban street LOS	E		